The Chemours Company FC, LLC
Sustainability, Room 13120
1007 Market Street
Wilmington, DE 19801
USA

February 27, 2018

U.S. Environmental Protection Agency
Office of Pollution Prevention and Toxics
Confidential Business Information Center (CBIC) – TS7407M
Attention: Scott Sherlock
William Jefferson Clinton Building
1201 Constitution Avenue, NW
Washington, DC 20004-3302

SUBJECT: P-08-0508/0509 – Response to EPA Headquarters' February 21, 2018 and February 26, 2018 Emails from Scott Sherlock

Dear Mr. Sherlock:

This letter and the enclosed information is submitted in response to the U.S. Environmental Protection Agency's ("Headquarters'") February 21st and 26th emails captioned "[GenX] study requests-2nd half of request." Chemours initially provided fifty-seven (57) studies by letter dated January 30, 2018 and an additional six studies by letter dated February 6, 2018.

The Chemours Company FC, LLC hereby submits via compact disk the studies listed below in response to Headquarters' request for entirely non-confidential versions of selected studies for P-08-0508 (CAS RN 13252-13-6) and P-08-0509 (CAS RN 62037-80-3). For your convenience, the first page of each study is also included herewith.

#	Study		Comment
	Ecotoxicity		
1	**DuPont-22830** Revised Attachment 3, 89 (H-28072 Static, Acute, 96-Hour Limit Test with Rainbow Trout, Oncorhynchus mykiss), [submitted 7/28/2008] Study completed on December 10, 2007, DuPont Haskell Lab, Newark, Delaware		*Included*
2	(H-28072 Static, Acute, 48-Hour Limit Test with Daphnia magna) [submitted 7/28/2008] **DuPont-22895**-AN, original and Rev. 2.; Study completed on July 19, 2007; Report revised on August 17, 2007 and September 19, 2007		*Included*
3	(H-28072 Static, 72-Hour Growth Inhibition Limit Test with the Green Alga, Pseudokirchneriella subcapitata) [submitted 7/28/2008] **DuPont-22911**, Study completed on January 9, 2008, DuPont Haskell Lab, Newark, Delaware		*Included*

4	Acute Toxicity to Fish of [FRD 902] P-08-0509 [submitted 3/4/2010] DP1388231; Study No.:S2009NC0.1(s)-01; Date of Report Completion: February 4, 2010; Key Lab of Pesticide Environmental Assessment and Pollution Control, MEP, Nanjing, China		No such study number located. Based on the date, title, and provided number, we believe the correct report number is **R2009NC031s-01**; *Included*
5	Acute Toxicity to Fish of P-08-0508 [submitted 5/7/2010] DP1388231; Study No.: S2009NC031(a)-01; Date of Report Completion: March 26, 2010; Key Lab of Pesticide Environmental Assessment and Pollution Control, MEP, Nanjing, China		We believe the correct report number is **R2009NC031a-01**; *Included*
	Fate		
	Test Substance: HFPO Dimer Acid Ammonium Salt		
6	**DuPont-17568-1675**: E.I. du Pont de Nemours and Company (2008). Estimation of the Adsorption Coefficient (Log Koc) of HFPO Dimer Acid Ammonium Salt on Soil and Sludge. OECD Guideline 121. Study Conducted by DuPont Haskell Global Centers for Health and Environmental Sciences (Study Completion Date: September 11, 2008), Newark, Delaware.		Included
7	The Chemours Company FC, LLC (2017). Occupational Serum Sampling. Test Guideline Not Identified. Testing Laboratory and Location not identified.		Based on the date and title, we believe this is report **C30031_516655**; *Included*
8	E.I. du Pont de Nemours and Company (2008). Occupational Blood Serum Sampling. Test Guideline Not Identified. Study Conducted by DuPont Haskell Global Centers for Health and Environmental Sciences (Report Date: August 1, 2008). Testing Laboratory Location not identified.		**PMN Attachment 128**; *Included*
9	E.I. du Pont de Nemours and Company (2010). Report for Inherent Biodegradation of FRD902. SEPA HJ/T 152-2004; GB/T 21818-2008; OECD Guideline 302C. Study Conducted by Key Lab of Pesticide Assessment and Pollution Control, MEP (Study Completion Date: February 8, 2010), Nanjing, China.		Based on report title, we believe this is report **R2009NCO31s-02**; *Included* Note that the Study Completion Date does not match.
	Fate		
	Test Substance: HFPO Dimer Acid		
10	E.I. du Pont de Nemours and Company (2009). Bioconcentration Study of FRD903 with Carp. Bioconcentration test of chemical substances in		Based on the completion date and report title, we believe this is report **A080560**; *Included*

	fish and shellfish (Yakushokuhatsu No. 1121002, Heisei 15.11.13 Seikyoku No.2, Kanpokihatsu No.031121002, November 21, 2003; the latest revision, November 20, 2006). Study Conducted by Yokohama Laboratory, Mitsubishi Chemical Medience Corporation (Study Completion Date: June 26, 2009), Tokyo, Japan; Kanagawa, Japan.		
11	E.I. du Pont de Nemours and Company (2008). Report for Inherent Biodegradation of FRD903. SEPA HJ/T 152-2004; GB/T 21818-2008; OECD Guideline 302C. Study Conducted by Key Lab of Pesticide Assessment and Pollution Control, MEP (Study Completion Date: March 26, 2010), Nanjing, China.		Based on the date and report title, we believe this is report **R2009NCO31a-02**; *Included*
12	M.C.M. Report Number **A080558**. E.I. du Pont de Nemours and Company (2009). Ready Biodegradability Test of FRD903. Biodegradability Test of Chemical Substances by Microorganisms (Yakushokuhatsu No. 1121002, Heisei 15.11.13 Seikyoku No. 2, Kanpokihatsu No. 031121002, November 21, 2003; the latest revision, November 20, 2006). Study conducted by Yokohama Laboratory, Mitsubishi Chemical Medience Corporation (Study Completion Date: May 25, 2009), Yokohama, Japan.		*Included*
	P-Chem		
13	E.I. du Pont de Nemours and Company (2008). Draft Washington Works - Semiworks Polykettle Data. Test Guideline Not Identified. Testing Laboratory and Location not identified.		**WW – Semiworks Polykettle Data**; *Included*
14	E.I. du Pont de Nemours and Company (2010). 8EHQ-06-16436/8EHQ-06-16478. Test Guideline Not Identified. Study Conducted by E.I. du Pont de Nemours and Company (Letter containing summary of findings for the study dated: March 15, 2010), Testing Laboratory location not identified.		Headquarters' February 26th email indicated that this request was no longer needed; *Not Included*
15	E.I. du Pont de Nemours and Company (2009). Sublimation of Processing Aids FRD-903L and FRD-902. Test Guideline Not Identified. Study Conducted by E.I. du Pont de Nemours and Company (Letter containing summary of findings for the study dated: January 21, 2009). Testing Laboratory location not identified.		**PMN Attachment 141**; *Included*
16	**DuPont 26349**: E.I. du Pont de Nemours and Company (2008). Determination of the Dissociation Constant and UV-VIS absorption spectra of H-28307. US EPA OPPTS 830.7370;		*Included*

	OECD Guideline 112; OECD Guideline 101. Study Conducted by Wildlife International, Ltd. (Study Completion Date: September 17, 2008), Easton, Maryland.		

Please contact me if you have any questions about this submission or need further clarification.

Sincerely,

Dawn S. Clark

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TRADE SECRET

Study Title

H-28072: Static, Acute, 96-Hour Limit Test with Rainbow Trout, *Oncorhynchus mykiss*

TEST GUIDELINES: OECD Guideline for the Testing of Chemicals
Section 2 (Part 203) (1992)

AUTHOR: Barbra D. Ferrell, B.S.

ORIGINAL REPORT COMPLETED ON: December 10, 2007

REPORT REVISION 1 COMPLETED: July 14, 2008

PERFORMING LABORATORIES: DuPont Haskell Global Centers for
Health & Environmental Sciences
P.O. Box 50
Newark, Delaware 19714
U.S.A.

Critical Path Services (CPS)
3521 Silverside Rd.
Quillen Bldg., Suite 1-I
Wilmington, Delaware 19810
U.S.A.

LABORATORY PROJECT ID: DuPont-22830

WORK REQUEST NUMBER: 17199

SERVICE CODE NUMBER: 228

SPONSOR: E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
U.S.A.

TRADE SECRET

Study Title

H-28072: Static, Acute, 48-Hour Limit Test with *Daphnia magna*

TEST GUIDELINES: OECD Guideline for the Testing of Chemicals
Section 2 (Part 202) (2004)

AUTHOR: Barbra D. Ferrell, B.S.

ORIGINAL REPORT COMPLETED ON: December 6, 2007

REPORT REVISION 1 COMPLETED ON: July 14, 2008

PERFORMING LABORATORIES: DuPont Haskell Global Centers for
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Critical Path Services (CPS)
3521 Silverside Rd.
Quillen Bldg., Suite 1-I
Wilmington, Delaware 19810
U.S.A.

WORK REQUEST NUMBER: 17199

SERVICE CODE NUMBER: 241

SPONSOR: E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
U.S.A.

TRADE SECRET

Study Title

H-28072: Static, 72-Hour Growth Inhibition Limit Test with the Green Alga, *Pseudokirchneriella subcapitata*

TEST GUIDELINES: OECD Guideline for the Testing of Chemicals
Section 2 (Part 201) (2006)

AUTHOR: Terry Lee Sloman, B.S.

ORIGINAL REPORT COMPLETED ON: January 9, 2008

REPORT REVISION 1 COMPLETED: July 11, 2008

PERFORMING LABORATORIES: DuPont Haskell Global Centers for
Health & Environmental Sciences
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Newark, Delaware 19714
U.S.A.

Critical Path Services (CPS)
3521 Silverside Road
Quillen Bldg., Suite 1-I
Wilmington, DE 19810
U.S.A.

LABORATORY PROJECT ID: DuPont-22911

WORK REQUEST NUMBER: 17199

SERVICE CODE NUMBER: 280

SPONSOR: E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
U.S.A.

SPONSOR

E.I. du Pont de Nemours and Company

REPORT FOR ACUTE TOXICITY TO FISH OF FRD902

(STATIC TEST)

Study No.: S2009NC031(s)-01

Report No.: R2009NC031(s)-01

Study Director: Shi Lili, professor

Date of Report Completion

Feb. 4, 2010

Key Lab. of Pesticide Environmental Assessment and Pollution Control, MEP

Address: 8 Jiang-wang-miao Street, Nan/jing 210042, China

Tel: (86)25 85287074 Fax: (86) 25 85474630

SPONSOR

E.I. du Pont de Nemours and Company

REPORT FOR ACUTE TOXICITY TO FISH OF FRD903
(STATIC TEST)

Study No.: S2009NC031(a)-01

Report No.: R2009NC031(a)-01

Study Director: Shi Lili, professor

Date of Report Completion

March 26, 2010

Key Lab. of Pesticide Environmental Assessment and Pollution Control, MEP
Address: 8 Jiang-wang-miao Street, Nan/jing 210042, China
Tel: (86)25 85287074 Fax: (86) 25 85474630

TRADE SECRET

Study Title

Estimation of the Adsorption Coefficient (K_{oc}) of HFPO Dimer Acid Ammonium Salt on Soil and Sludge

Author

Peter A. Bloxham, Ph.D.

Date Study Completed

September 11, 2008

Performing Laboratories

DuPont Haskell Global Centers for Health and Environmental Sciences
Stine-Haskell Research Center
Newark, Delaware 19714
U.S.A.

Study Number

DuPont-17568-1675

charles river

FINAL BIOANALYTICAL REPORT

Test Site Study No. 516655

Clinical Trial Reference No. C30031

Determination of HFPO-DA in EDTA Human Plasma Samples

SPONSOR:
The Chemours Company
1007 Market Street
Wilmington,
DE 19899
USA

TEST SITE:
Charles River Laboratories Den Bosch BV
Hambakenwetering 7
5231 DD 's-Hertogenbosch
The Netherlands

Charles River Laboratories Den Bosch BV
Nistelrooisebaan 3
5374 RE Schaijk
The Netherlands

Attachment 128

Occupational Blood Serum, Sampling

During a 6-day plant scale R&D test involving PMN substance P-08-509, occupational blood serum samples were collected for the purpose of assessing the effectiveness of industrial hygiene controls and further evaluating potential biopersistence. This plant scale R&D test was conducted at the DuPont Washington Works facility in West Virginia.

More specifically, blood serum samples were collected from 12 employees at the DuPont Washington Works facility who volunteered for testing. Of the 12 employees who were tested, one employee (Worker ID 1) was involved with research on the PMN substance and other potential alternatives for PFOA.[1] The remaining 11 employees worked various shifts for the plant scale R&D test. Of these 11 employees, 1 employee (Worker ID 2) was not an operator during the test, while the remaining 10 employees were operators during the test. Personal protective equipment (PPE) worn by the operators during the test is consistent with that described on PMN P-08-509 page numbers 109, 110, and 117-119.

Serum samples were analyzed for 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionoate anion and results are reported below, in Table 1, as the ammonium salt form [P-08-509]. Please note that this analysis does not differentiate whether the anion originates from the acid form [P-08-508] or the salt form [P-08-509]. The analytical method used was acetonitrile protein precipitation followed by LC/MS/MS.[2] Analysis was conducted by DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, Delaware.

Serum samples were to be collected in 3 draws, as described below.

1st Draw: 1st Draw samples were taken prior to the start of the plant scale R&D test to establish a baseline.

2nd Draw: 2nd Draw samples were to be taken during the last shift worked by the employee during the plant scale R&D test.

3rd Draw: 3rd Draw samples were to be taken 54 to 66 hours after the 2nd Draw sample was taken, where possible.

The actual time between draws is provided in Table 1 below.

A 4th Draw sample was taken for the one employee having a 3rd Draw sample result above the quantification limit. This sample, taken 550 hours after the 3rd Draw sample, was non-detect.

[1] This employee was not involved in the plant scale R&D test. Testing was conducted per request of the employee.
[2] See Document 1, attached, for details on the analytical method.

SPONSOR

E.I. du Pont de Nemours and Company

REPORT FOR INHERENT BIODEGRADATION OF FRD902

Modified MITI (II) Test

Study No.: S2009NC031(s)-02

Report No.: R2009NC031(s)-02

Study Director: Shi Lili, professor

Date of Report Completion

March 26, 2010

Key Lab. of Pesticide Environmental Assessment and Pollution Control, MEP

Address: 8 Jiang-wang-miao Street, Nanjing, 210042, China

Tel: (+86)25 85287074 Fax: (+86) 25 85474630

FINAL REPORT

Bioconcentration Study of FRD903 with Carp

(Study No. A080560)

Submitted to :

DU PONT-MITSUI FLUOROCHEMICALS COMPANY, LTD.

Prepared by :

Mitsubishi Chemical Medience Corporation

June 26, 2009

SPONSOR

E.I. du Pont de Nemours and Company

REPORT FOR INHERENT BIODEGRADATION OF FRD903

[Modified MITI (II) Test]

Study No.: S2009NC031(a)-02

Report No.: R2009NC031(a)-02

Study Director: Shi Lili, professor

Date of Report Completion

Mar. 26, 2010

Key Lab. of Pesticide Environmental Assessment and Pollution Control, MEP

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三井・デュポンフロロケミカル株式会社殿

報　告　書　英　訳

（試験番号：Ａ０８０５５９）

英訳対象報告書

ＦＲＤ９０３の分解度試験

（試験番号：Ａ０８０５５８）

２００９年　６月１７日

三菱化学メディエンス株式会社

Washington Works – Semiworks Polykettle Data

Attached is a semiworks vapor space sample taken from the research polykettle after react down on a FEP 100J type recipe

Confirmed Major Components		**Confirmed Minor Components**	
TFE content:	20.6 Vol%	K116	900 mpm (0.09 Vol%)
HFP content:	78.6 Vol%	K1225	6 mpm
		PFBY2	12 mpm
		Dimer	240 mpm
		E-1	2900 mpm (0.29 Vol%)

Unknowns (based on generic response factor for the listed GC column)

K13	unconfirmed, but expected.
Unk1	1050 mpm (PEVE Combo GC, at approx. 1/2 RT of E-1)
Unk2	630 mpm (PEVE Combo GC, at approx. 0.8 RT of E-1)
Unk3	330 mpm (PEVE Combo GC, at approx. 1.1 RT of E-1)

GC/MS

Confirms K116, TFE, HFP, E-1 and E-2... (and see below)

Confirms at least 2 unknowns which most likely correlate to Unk1 and Unk2 above

First unknown elutes on tail of HFP peak, i.e., similar volatility, likely Unk1

Second unknown elutes near E-2, but does not contain m/e 169 (characteristic SIM of E fluids)

Most likely corresponds to Unk2.

No obvious, logical MS Library matches to confirm Unknowns at this time.

Discussion:

The vent sample supplied at ca. 450 psig from the subject batch, was analyzed in late August. A sample balloon and glass cylinder was evacuated prior to connection with the SS sample bomb through a vacuum "T." The vacuum was broken by opening the sample valve slightly to begin filling the balloon through the cylinder. This purge then was reevacuated to < -28 in. vac. The sample vapor from the bomb then was used to inflate the balloon to the size of an orange through the glass cylinder. The cylinder was then sealed via it's stockcocks and sampled for GC via it's side port.

The full range of non-routine GC analyses were used to evaluate the vapor sample. In addition several vapor injections were made to the GC/Mass Spec unit.

Central Research and Development
Corporate Center for Analytical Sciences
Experimental Station

DuPont EDL BMP 14/286
J. Allen Tannen TRC E323/3309

January 21, 2009

TO: J. R. Hoover, FLPR, CRP 702/2116

FROM: A. D. English

SUBLIMATION OF PROCESSING AIDS FRD-903K AND FRD-902

Please find attached a copy of an Analytical Report entitled "Gas Phase Migration of FRD-903K and FRD-902 Under Ambient Conditions." This Analytical Report documents work done to address the issue of sublimation of FRD-903K and FRD-902 under ambient conditions. The report concludes that the FRD-903K and FRD-902 can migrate as a molecule containing the entire backbone with an unknown counter-ion (CF3CF2CF2CF(CF3)COOX; X not defined) inside an infrared spectroscopy gas cell resulting in reaction product formation on the alkali salt windows. Note that this conclusion deals with migration, not sublimation

Differentiation between sublimation and migration is a subtle and often confused subject. There are many papers in the literature dealing with sublimation; however, two papers deal with the sublimation of NH_4Cl.[1,2] These papers indicate that the salt undergoes a chemical reaction to make NH_3 and HCl and these two gases then vaporize. In the strictest sense this is not a sublimation, but a chemical reaction; however, the authors of both papers refer to this as sublimation. This is relevant to the current case because while the data is most consistent with the transporting species being dimer acid (formed from a reaction of the salt with water) and in this case this would not be, strictly speaking, sublimation, but rather a chemical reaction followed by transport; however, this hypothesis has not been rigorously proven and the alternative hypothesis would be direct sublimation.

The conclusion that the transporting species is either the acid (CF3CF2CF2CF(CF3)COOH) or one of the salts (CF3CF2CF2CF(CF3)COOX; = K or NH_4) is valid.

References

1. "Rate of Sublimation of Ammonium Halides" Chaiken, R. F.; Sibbett, D. J.; Sutherland, J. E.; Van de Mark, D. K.; Wheeler A. *J. Chem. Phys.* 1962 *37(10)*, 2311.

2. "Sublimation of Ammonium Salts: A Mechanism Revealed by a First-Principles Study of the NH_4Cl System" Zhu, R. S.; Wang, J. H.; Lin, M. C. *J. Chem. Phys.* 2007 *111*, 13831.

TRADE SECRET

Study Title

DETERMINATION OF THE DISSOCIATION CONSTANT AND UV-VIS ABSORPTION SPECTRA OF H-28307

Test Guidelines

U.S. EPA Product Properties Test Guidelines
OPPTS 830.7370, Dissociation Constant in Water (1996)

OECD Guideline for Testing of Chemicals 112,
Dissociation Constant in Water (1981)

OECD Guidelines for Testing of Chemicals, 101
UV-VIS Absorption Spectra

Authors

John R. Murrell, B.S.
Willard B. Nixon, Ph.D.

Date Study Initiated

June 25, 2008

Date Study Completed

September 17, 2008

Performing Laboratory

Wildlife International, Ltd.
8598 Commerce Drive
Easton, Maryland 21601
U.S.A.

Sponsor

E.I. du Pont de Nemours and Company
Wilmington, Delaware 19898
U.S.A.

DuPont Project Identification Numbers

DuPont Report No.: Dupont-26349

Work Request No.: 17473

Service Code: 1649

Wildlife International, Ltd. Study Number

112C-147